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New Species of Grasses.

By George Vasey.

Sporobolus Wolfii.—This was published and figured in the Botany of Wheeler's Survey, Vol. vi., 1878, as *Vilfa minima.* As *Vilfa* is now united with *Sporobolus*, and as the specific name is preoccupied, it therefore becomes necessary for our plant to have a new name, as above, in honor of the discoverer, Mr. John Wolf. It was collected at Twin Lakes, Colorado, in 1873. It is much more diminutive than *Sporobolus gracillimus*, Thurb., with the spikelets only half as large.

Danthonia intermedia.—Culms 1–1½ ft. high, leafy below, radical leaves 6–10 inches long, narrow, cauline leaves 2 to 6 inches, pubescent, especially on the sheaths, ligule merely a narrow hairy ring, with longer hairs at the margins; panicle narrow, 1–2½ inches long, rays alternate, mostly short, the lower generally with 2 or 3 spikelets, the upper with single spikelets; spikelets 6–8 lines long, about 5-flowered, empty glumes somewhat longer than the flowers, about 5-nerved, acute; flowering-glumes 3–4 lines long, mostly smooth on the back, hairy on the margins, nerves not prominent, teeth about 1 line long, broad, awn stout, about 3 lines long, palet slightly shorter than the flowering-glume.

This may be readily distinguished from *D. sericea*, with which it has been confounded, by its shorter and smoother culms and leaves, closer and fewer flowered panicle, flowering-glume smooth or smoothish on the back, by the much shorter and broader teeth, and shorter, stouter awns.

California, Rocky Mountains, Plains of Br. America to Mt. Albert, Lower Canada (O. D. Allen).

New North American Fungi.

By J. B. Ellis.

The species of fungi here described were collected by Mr. S. J. Harkness in Utah Territory, mostly at an elevation of 7,600 to 8,000 ft. It should also be stated that the species described on pp. 123–4, Vol. viii. of this journal, were collected at this same altitude.

Alternaria hispidula.—Forming olivaceous tufts shaped like a *Helotium*, with a thick stem composed of closely compacted, branching, minutely roughened threads, expanding at intervals of 15–20μ into oval-elliptical, 3–4-septate, minutely roughened spores, 12–20 x 8–12μ.

On sage-brush.

Peziza oleosa.—Scattered or gregarious, small, subglobose when fresh, orbicular and concave, with a thick, obtuse margin when dry, substance oily-gelatinous, color bright orange-red; asci sessile, sublanceolate, broadest in the middle (75–90 x 10–12μ); paraphyses none; sporidia biseriate, fusiform-navicular, uniseptate, hyaline, 18–22 x 3–3½μ.

Allied to *P. fusarioides*, Berk. On dead herbaceous stems.

Lophiostoma pallidum.—Perithecia subhemispherical, $25^{\text{mm.}}$ in diameter, collapsing above; ostiolum only slightly prominent and not strongly compressed; asci sessile, subcylindrical, 90–100 x 12–15μ; paraphyses filiform; sporidia more or less biseriate, oblong-cylindrical, nearly hyaline, about 7-septate, ends obtuse, slightly curved and one end broader, 18–24 x 5–6½μ.

On weather-beaten wood of service-tree.

SPHÆRIA (MELANOMMA) SULCATA.—Superficial, densely gregarious, perithecia ovate (.33$^{\text{mm.}}$), black; not polished; ostiolum tuberculiform, large, with a rather large and nearly circular opening; asci clavate-cylindrical, 130 x 22μ; paraphyses abundant; sporidia biseriate, broad navicular-fusiform, septate, straw-yellow, becoming brown, 35–45 x 11–15μ.

On dead sage-brush.

CUCURBITARIA UMBILICATA.—Scattered, depressed-hemispheric, black, rough (.33–.5$^{\text{mm.}}$), collapsing above when dry; asci cylindrical, 114 x 11μ; sporidia mostly uniseriate, elliptical, constricted in the middle, 3-septate and straw-colored at first, becoming muriform and brown, 22–28 x 9½–13μ.

On decorticated sage-brush.

LEPTOSPHÆRIA OLIVACEA.—Perithecia submembranaceous, about .25$^{\text{mm.}}$ in diameter, buried in the substance of the stem and covered by the cuticle, which is slightly elevated, stained olive-brown and pierced by the broad, rough, obtuse ostiolum; asci clavate, 75–85 x 15–18μ; sporidia fasciculate yellow-brown, vermiform, 6–7-septate, and, when mature, slightly constricted at the septa, third joint from the tip slightly swollen, 75 x 3½–4μ.

The spore is generally slightly bent just below the last-named joint. On dead herbaceous stems.

PLEOSPORA AUREA.—Perithecia gregarious, subcuticular (.25–.33$^{\text{mm.}}$ in diameter), soon collapsing, of coarse cellular structure and surrounded at the base with a coarse, fringe-like mycelium of brown, septate, sparingly branched, creeping hyphæ, which are plainly visible through the transparent cuticle; asci broad, obtuse, sessile, about 114 x 3μ (spore-bearing part); sporidia biseriate, elliptical, flattened, 4-septate, with all but the terminal cells divided by a longitudinal septum, golden-yellow, 27–30 x 11–15μ.

On dead herbaceous stems.

PLEOSPORA PLANISPORA.—Perithecia gregarious, collapsing when dry (.25–.33$^{\text{mm.}}$), covered by the scarcely discolored epidermis; asci 114–120 x 25–28μ; sporidia biseriate, oblong-elliptical, flattened, 5-septate, with a longitudinal septum on each side running through all but the terminal cells, yellow, becoming brown, 30–40 x 15–20 x 11μ; paraphyses abundant.

On dead culms of some grass, apparently a species of *Elymus*; mostly on the sheaths.

This is closely allied to the preceding species, but the mycelium is less abundant, the sporidia larger and quite constantly 5-septate.

PLEOSPORA BACCATA.—Perithecia subcuticular, hemispheric, collapsing, rough (.33–.5$^{\text{mm.}}$), fringed around the base with abundant, brown, creeping hyphæ; ostiolum papilliform; asci oblong-cylindrical, 114 x 23μ; sporidia biseriate, oblong-elliptical, 3-septate, with a partial longitudinal septum. The spore is often composed of only six divisions or cells, loosely attached to each other, the four middle ones placed in a subquadrate manner, with a single nearly globose cell at each end. These different cells are so slightly attached to each other that they easily separate and the sporidium breaks up like a crumbling raspberry.

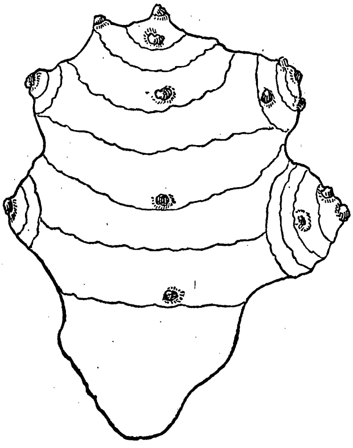
On the dead stems of some species of *Cirsium*.

SPHÆRIA (ANTHOSTOMELLA) PHOLIDIGENA.—Perithecia subcuticular, erumpent, hemispheric, rough ($.33$–$.5^{mm.}$); ostiolum slightly prominent, with a rather large aperture; asci linear, $114 \times 7\mu$; paraphyses abundant; sporidia uniseriate, narrow, elliptical, continuously brown, 7–10×5–6μ. Some of the perithecia contain stylospores, which are much like the ascospores, but a little shorter. This differs from *Amphisphæria conorum*, Fckl., only in its smaller sporidia and differently shaped stylospores, and may, perhaps, be more properly considered as a mere variety of that species.

On cones of red pine. On the back of the scales and mostly covered by the overlapping point of the next scale below.

Morphology in the Tuber of Jerusalem Artichoke.—Picking up, in my garden, a tuber of Jerusalem artichoke which had been thrown out on the surface by recent spading, I was attracted by the prominence of the buds, and the distinct markings on the tuber, showing the position of the buds, leaves and branches in the order of their phyllotaxis. The accompanying sketch, which I made at the time, will exhibit this arrangement.

On the growing stem, the artichoke (*Helianthus tuberosus*) has the leaves opposite during the early part of its growth, the upper leaves gradually becoming alternate. In this tuber, or underground stem, the opposite-leaved arrangement is plainly visible. On the right side are two arrested branches from the axils of suppressed leaves, corresponding to two others on the left side which are not so fully developed. The alternate buds, occupying the front face (and to which there are others corresponding on the opposite face) seem not to have developed into branches, but remain only as buds. The wavy lines of exfoliating membrane or skin seem morphologically to belong to the leaf-system, and mark the division of the nodes, corresponding in this with the ridge formed by the expansion and adnation of the bases of the opposite leaves as seen in the stem above ground. The internodal spaces are very much contracted, and their wavy, undulating course is due to



NOTE.—*Valsa didymospora*, described on p. 98, Vol. ix., of the BULLETIN, proves to be only an imperfectly developed state of *Valsa subcuticularis*, C. & E.